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Psychological Monographs: General and Applied

Attitude Change: Instability of Response and Acquisition of Experience¹

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SUPPOSE some people express different attitudes at two successive points of time; to what circumstances can the change be attributed? This is the major question raised in this paper. The same question may be asked regarding any two successive verbal responses, given by the same persons, whether they represent answers to questions of fact and information or expressed opinions and attitudes. Though some references will be made to other responses, the studies presented here are concerned mainly with short-run expectations regarding economic matters. Expectations may be defined as subjective notions of things to come and are therefore attitudes with a future time perspective (see 7). Most economic expectations differ not only from answers to questions of fact but also from deep-seated attitudes which tend to endure in spite of changing circumstances.

¹ The author is greatly indebted to the Ford Foundation as well as to his colleagues at the Survey Research Center who made the surveys reported here possible and helped him with analytical and statistical problems. Although it is difficult to single out a few people when a study is based on the collaboration of a rather extensive group of research workers, the author feels particularly indebted to William Hays, James N. Morgan, and Eva Mueller. Parts of this study, together with other findings derived from the Ford Foundation panel, were presented to a conference arranged by the National Bureau of Economic Research on The Quality and Economic Significance of Anticipations Data in Princeton, November 1957.

The starting point of the study is a differentiation between instability of response and acquisition of experience. The latter concept is then subdivided into personal experiences affecting one person individually, and acquisition of information which is available to very many people. We may summarize the findings obtained by distinguishing three major circumstances which may account for changes in successive responses.

Misclassifications. In a narrow sense this term includes clerical errors, interviewing errors, misunderstanding by respondents, and reporting errors. In a broader sense one may include in the same category effects of the mood of the respondent, and changes resulting from guessing or expressing ad hoc opinions when a respondent does not know the answer but is induced to reply.

Personal Experiences. In the typical learning situation, a person changes his response because he has learned something in the time period between the first and the second test. Events and developments affecting the respondent between the first and second interview (for instance, an accident or a promotion) are examples of personal experiences which may influence his opinions and attitudes.

These are instances of "true change" which are important for the individual. Yet such changes may be unimportant in the aggregate because they may cancel

out. This assumption was confirmed, and the following generalization emerged: When individuals change their opinions and attitudes because of personal experiences, the distribution of opinions and attitudes in the entire sample is likely to vary little, because shifts from Attitude A to B and from Attitude B to A cancel out. More important is evidence supporting the validity of the same principle expressed in reverse: When two successive measurements of subjective notions yield similar aggregative distributions, then it is likely that many individuals have changed their attitudes in one direction, and many others in the opposite direction.

Social Learning. Acquisition of information by broad groups of people who receive the same information about new developments in their environment (for instance, receive widely circulated news about general price or wage increases) must be distinguished from personal experiences. When significant new developments take place in the environment and information about them is widely transmitted, many people comprehend the information in a similar manner, the information is reinforced through personal contacts and discussions, and similar changes in attitudes are induced. At the same time, "swimming against the current" becomes difficult even for people with contrary personal experiences. Therefore, when in the aggregate there is a substantial change in subjective notions, then it is likely that individual changes will be predominantly in one direction; the population tends to fall into two major groups: those who shifted in one direction and those who did not change at all. In other words, in this situation the total number of changers will be close to the minimum number

required to bring about the aggregative change in the distribution.

This report on the studies is organized as follows: The first two short sections are concerned with problems of definition and with statistical problems of measurement. The quantitative findings are presented in the third major section. This section presents descriptive results on the relation between aggregative changes in attitudes and changes by individuals, the findings regarding the origin of changes in expectations, and effects of attitude change on nonverbal behavior. In the last major section the implications of the findings are discussed. Implications for survey research and business cycle research are presented in some detail, while the closing words on implications for behavioral theory require elaboration aided by additional studies.

Differences and similarities in the changes of attitudes of individuals and of large groups of people—as, for instance, a representative sample of American families—are crucial for this study. Therefore the study could be carried out only by drawing a representative sample and interviewing it several times. Such a panel study was made possible by a four-year grant, given in 1954 by the Ford Foundation to the Survey Research Center of the University of Michigan, for studies, directed by the author of this paper, on the origin and effects of economic attitudes.

FORMS OF ATTITUDE CHANGE

When at two successive points of time two different representative samples drawn from the same universe are asked the same question, or are given the same test, we obtain information on how the response has changed in that universe.

For instance, we may ask a representative sample of the American people about their leanings toward the Republican or the Democratic party; then, say, six months later we may ask another representative sample the same question. We will find either that no changes have taken place (or that the observed changes in the "marginals" are small and not significant—Case 1, Table 1) or that there were substantial changes from, say, Response B to Response A (Case 2).

Much additional information can be obtained from queries directed to two representative samples at two successive points of time. By asking several questions at both times, we may study the consistency or inconsistency of the observed changes. Or we may determine the demographic and economic characteristics (age, income, etc.) of those who gave the one or the other response. If, however, our major purpose is to analyze the changers—to find out why changes took place and what the consequences of

the changes were—we may use a different procedure, namely, to contact the identical people twice in succession. This procedure has disadvantages for the purpose of measuring the changes in distributions because of panel mortality and panel bias (6, 9), but it has the great advantage of yielding information on the turnover of individuals.

Changes in the over-all distribution, whether small or large, may come about either through few changes in the same direction or through many changes, some of which offset each other.² For instance, the "small" change in marginals illustrated in Case 1 (Table 1) from 50% to 55% A responses may come about by only 5% of the sample changing their response (minimum turnover) or by 95% doing so (maximum turnover), or by any proportion between these two extremes. Similarly, there are a great many possibilities as to how a change from 50% to

² This possibility has also been pointed out by Lazarsfeld (12, p. 517; 2, p. 243).

TABLE 1
MODELS OF MARGINAL CHANGE AND TURNOVER OF INDIVIDUALS

	Case 1			Case 2		
	Measurement			Measurement		
	I	II		I	II	
Marginals						
Response A	50%	55%		50%	70%	
Response B	50	45		50	30	
Total	100%	100%		100%	100%	
Minimum Turnover						
	50A,A	5B,A	55IA	50A,A	20B,A	70IA
	0A,B	45B,B	45IIB	0A,B	30B,B	30IIB
	50IA	50IB	100	50IA	50IB	100
Intermediate Turnover						
	35	20	55	35	35	70
	15	30	45	15	15	30
	50	50	100	50	50	100
Maximum Turnover						
	5	50	55	20	50	70
	45	0	45	30	0	30
	50	50	100	50	50	100

Note.—I=first measurement; II=second measurement; A=frequency of Response A; B=frequency of Response B.

70% A responses may come about (Case 2). In this case the smallest possible number of changers is 20%, and the largest 80%.

This scheme applies to a great variety of situations. We may, for instance, think of experiments performed in the psychology of learning. Suppose that, at the time of the first test, the subjects do not know the answer to a question, and 50% say A and 50% say B. We then divide the subjects into two equated groups. Group 1, which we call the control group, is not taught anything between the first and second tests and happens to give 55% A responses the second time. Will this result come about by only 5% changing their response, or by many more shifting from A to B and also from B to A? The experimental group, Group 2, is given some instruction prior to the second test, to which we attribute the observed increase in the frequency of A responses from 50% to 70%. What proportion of individuals will have changed their response in this case?³

We may distinguish between the following four possibilities:

	MARGINAL CHANGE	TURNOVER OF INDIVIDUALS
Case 1a	small	close to the minimum
Case 1b	small	much larger than the minimum
Case 2a	large	close to the minimum
Case 2b	large	much larger than the minimum

Is it possible to characterize the situations in which each of the four cases is

likely to occur? Or, given a small (large) marginal change, under which circumstances will we expect a "small" and under which circumstances a "large" turnover of individuals? Are there any principles which link either small or large marginal changes with either "small" or "large" turnover? In speaking of "small" turnover we mean a situation in which the number of changers is close to the minimum required to bring forth the given marginal change; and in speaking of "large" turnover, a situation in which the number of changers is much larger than the minimum. Therefore, here, as well as in our later discussion, the term turnover does not refer to the absolute number of changers.

Observed changes in the response are a function of true changes and of misclassifications. Misclassifications, either in the first or in the second measurement, may be due to interviewing errors, clerical errors, misunderstanding by the respondent, and intentionally or unintentionally incorrect replies (reporting errors). Effects of difficulties in the question which foster a misunderstanding, effects of guesses and hunches made because the respondent does not know the answer but is induced to reply, as well as effects of the mood of the respondent⁴ may be viewed in a certain sense as substantive changes. Yet they may be included under misclassifications so as to be excluded from other types of changes in response which permit us to study lasting effects of attitude change.

True change is then defined as a development (acquisition of experience, learning) which has taken place in the interval between the two measurements and affects the response. The develop-

³ Such an experiment might be performed, for example, by asking high school students who have no information about China: "Which is the largest city of China, Peiping, or Shanghai?" After recording the guesses, half of the students are shown a film about crowds of people on the Bund of Shanghai, while the other half does not hear about China prior to the second test. Before-after experiments, in which attitudes were measured both before and after the introduction of certain stimuli, are carried out frequently.

⁴ These and related factors have been studied by Patricia Kendall (10).

ment may be personal, concerning just one individual in a group or sample; or it may be general, affecting many or all individuals in the group. The personal factors may cancel out for the group as a whole and thus influence the rate of turnover but not the marginal change, while the general changes may not cancel out and may even reinforce each other. The following example may serve to illustrate this difference. Suppose we ask a large sample of people: "Would you say that you are better off or worse off financially than six months ago?" in January and again in July. We may then find some people who had an accident or serious illness in the interval between the two contacts and who therefore shift from the answer "better off" to the answer "worse off." At the same time, we may find some people who, having recovered from an illness or accident, shift in the opposite direction. These are examples of true changes of a personal nature which may cancel out. If, however, there were general wage increases in March and April from which very many people benefitted, we would be confronted with a different kind of true change. Similarly, if business conditions deteriorated considerably from January to July, and newspapers, radio, and television brought extensive reports on wage cuts and profit declines, then we could expect a snowballing effect of the true change.

These considerations may help us to answer the question about the conditions under which the four cases are expected to occur. Some of the notions to be presented have received support through the studies of Kendall, while others will serve as hypotheses to be tested in our studies:

Case 1a: Small marginal change and

small turnover of individual responses. We expect to find this case when simple and easily understood questions call for well-established facts or attitudes and when there is no true change in the period between the two measurements. For instance, when the question concerns the education of adult respondents, we expect to obtain substantially the same marginal distributions in January and July and expect this to come about through relatively few individuals changing their response.

Case 1b: Small marginal change and large unnecessary turnover. Suppose again there is no true change but the question calls for guesses and hunches rather than for a well-established answer. Then a sizable proportion of people may shift from Guess A to Guess B, and another similar proportion from Guess B to Guess A.

We assume that this is not the only instance of Case 1b. True changes in both directions due to different personal experiences may likewise bring forth small marginal changes and large turnover, even if question and answer are clear and do not involve guesses.

Case 2a: Large marginal change and small turnover. The prototype of this case is, of course, effective learning by an entire group. For instance—we change the previously given example slightly—if prior to the second test our class is told that Peiping is the largest city of China, we shall expect many students to change their responses from Shanghai to Peiping, and hardly any from Peiping to Shanghai. In survey research we may expect a similar result under the following circumstances: A true change takes place which affects many people (is not a "private event"), is important, is easily understandable, and is reinforced through

social facilitation. For instance, assume that the cost of living went up radically in a given year, bringing hardship and considerable public discussion. Suppose, once before and once after the price increases, we ask: "Have prices of things you people buy gone up, remained the same, or gone down during the last year?" Then we would expect a considerable increase in the proportion of people answering "gone up" and hardly any frequency in the cell which represents shifts in the opposite direction (except for misclassifications).

Is Case 2a expected to occur under other less obvious circumstances? This is a crucial question for attitude research. Substantial aggregate shifts in intentions and expectations—such as an increase in the proportion of people expecting to vote for a candidate or expecting prices to go up—are often attributed some predictive value. Do such shifts arise through substantial turnover of individuals in both directions (Case 2b) or do they arise under circumstances which resemble the learning process, involve few counter-shifts, and may be classified as "social learning"?

Case 2b: Large marginal change and large unnecessary turnover. Unreliable measurements with true change in one direction or with a preponderance of misclassifications in one direction may bring about this case. To give just one somewhat artificial example: Suppose, once on a beautiful summer day and once on a dark winter day, we ask: "A week from today will the weather be cloudy or sunny?" Then it is possible that there will be many shifts in both directions, but the shifts from "sunny" in the summer test to "cloudy" in the winter test will predominate.

Alternatively, it is possible that Case 2b occurs even though people are not

guessing. Assume that both "public" and "private" events take place: for instance, that there is news of an improvement in the business situation and that some people have experienced income increases and some people income declines. Shall we then find a substantial marginal change coinciding with a large turnover of responses?

STATISTICAL MEASURES

Our first task is to construct measures for the two crucial variables, namely, marginal change and the rate of unnecessary turnover of individual responses. The measures should be applicable to instances in which there is no true change, as well as to those in which there is a true change in either or both directions. Furthermore, the measures should not be restricted to the deceptively simple dichotomous distributions which have been presented so far (in Table 1). We shall present measures for 3×3 distributions—attitudes measured twice on scales such as up-same-down or better-uncertain-worse—since most of our data are of this kind. Yet the measures can be extended to more elaborate data. The measures and this paper will be restricted to the analysis of turnover in two successive tests.

We introduce first a set of symbols. The marginals are denoted by small letters; those obtained in the first measurement are called p and in the second measurement, q . We have, of course, three cells for individuals giving unchanged or consistent responses (C), and six cells for individuals with changed responses; two of the latter represent two-step changes (denoted with the suffix 2), and four represent one-step changes.

		MEASUREMENT I			
		C_1	C_{1A}	G_2	q_1
		L_{1A}	C_2	C_{1B}	q_2
		L_2	L_{1B}	C_3	q_3
MEASUREMENT II		p_1	p_2	p_3	

There are two types of changes; we denote them with the letters G (gain) and L (loss).⁵ We call those changes G which bring forth the marginal change, and those changes L which detract from it. Viewing the marginal change as a current, gains represent swimming with the current; and losses, swimming against the current. By definition the gains are larger than losses (that is, the turnover tables will be written so as to conform with this definition).

By differentiating between two-step changes and one-step changes and arbitrarily assigning a double value to the former, we have

$$G = 2G_2 + G_{1A} + G_{1B} \\ L = 2L_2 + L_{1A} + L_{1B}$$

Marginal change (M Ch) can be expressed either in terms of marginals or in terms of turnover cells:

$$M Ch = G - L = (q_1 - q_2) - (p_1 - p_2) \text{ or} \\ (2q_1 + q_2) - (2p_1 + p_2)$$

The expression $(100 + q_1 - q_2)$ or $(100 + p_1 - p_2)$ has been frequently used to compute an index of attitudes.⁶ Clearly the difference between two successive index values represents the aggregate or marginal change in attitudes.

The proportion of changers $(G + L)$ and the proportion of consistent people $(C = 100 - (G + L))$, disregarding the duplication of two-step changes) do not represent useful measures for the purpose of testing the relation of "unnecessary" turnover to marginal change. Obviously, the larger M Ch $(G - L)$, the larger is G (and therefore $G + L$). The crucial variable is L, as emphasized first by Lazarsfeld and Kendall (10). Yet we cannot rest satisfied with measuring turnover by L alone. L is negatively correlated with marginal change. What we are interested in is to find out where, in actual observations, L lies in the continuum between the smallest possible instance (minimum L) and the largest possible instance (maximum L). We locate the position

⁵ The letters G and L have been taken from information theory. The relation between information transmitted and information received has often been presented in a manner similar to our turnover tables. To be sure, in our case it is not possible to speak of "true information" (information transmitted and received), but only of consistent information or consistent attitudes. Yet what has often been called, in information theory, Gain and Loss—namely, information not transmitted but received, and information transmitted but not received—presents some similarities to our case of gaining or losing information over time.

⁶ See, for instance (9, p. 93) and the references given there to other diffusion indices.

of observed L in the continuum between Min L and Max L:

$$\frac{L - \text{Min L}}{\text{Max L} - \text{Min L}}$$

Our turnover measure, T, represents the relation of the distance between L and Min L to the distance between Max L and Min L. Since Min L is zero in all our distributions, we get:

$$T = \frac{L - \text{Min L}}{\text{Max L} - \text{Min L}} = \frac{L}{\text{Max L}}$$

This formula yields the value of 1 if L is equal to Max L, and a value of 0 if L is zero. In other words, the smaller the T, the smaller the proportion of changers beyond those necessary to bring forth the marginal change.

Given the marginals it is always possible to calculate Max L. In a simple, pragmatic way we calculate differently for two cases: those in which p_1 is larger and in which p_1 is smaller than q_2 . In the first case $2q_2$ represents the maximum possible value for the q_2 row; to this must be added the maximum possible value of L_{1A} , which is either q_1 or the difference between p_1 and q_2 , whichever is smaller. Therefore,

$$\text{Max L} = 2q_2 + \min \{(p_1 - p_2) \text{ or } q_2\} \text{ if } p_1 \geq q_2 \\ \text{Max L} = 2p_1 + \min \{(q_2 - p_1) \text{ or } p_1\} \text{ if } p_1 < q_2$$

The measures presented here do not represent a solution of the complex problem of developing independent indicators for extent of change in distributions (trend) and for the number of changers. For our purposes of relating unnecessary turnover (rather than number of changers) to changes in distributions, T appears to be a useful formula.

The formulas given above can be worked out for 3×3 distributions in which no distinction is made between one-step changes and two-step changes. In that case L is equal to the sum of the three Loss cells, while

$$\text{Max L} = \min [(p_1 + p_2) \text{ or } (q_2 + q_3) \text{ or} \\ (p_1 + q_2) \text{ or } 50\%]$$

The data to be presented forthwith have also been calculated on this basis and indicate similar regularities. This method of calculating turnover involves, however, loss of information and is therefore inferior to the first method.

The statistical measures prepared to 3×3 distributions with duplication of two-step changes can be readily generalized for more complex distributions.

$$M Ch = [(n-1)q_1 + (n-2)q_2 + \dots + \\ q_{(n-1)}] - [(n-1)p_1 + (n-2)p_2 + \\ \dots + p_{(n-1)}]$$

L can be calculated by multiplying the frequency of observed loss cells with the number of steps by which they are removed from the diagonal. Max

L can be calculated by preparing a turnover diagram which places the maximum number of observations, consistent with the given distribution of the two sets of marginals, in the extreme lower left corner.

Our T measure is one of several possible measures. The literature contains, as far as the author is aware, two other measures. For the purpose of studying stability and instability of response, Lazarsfeld has developed a turnover index, x , which is applicable to dichotomous distributions only.⁷ The index is calculated from the equation, $L = x(R - x)$, where R is the sum of the marginal values of the row and the column in which L falls.

The Lazarsfeld index is derived from latent structure theory. The difference between latent true values and observed values is relevant, of course, for what we have called misclassifications. The index has been extended to circumstances in which there is a true change in one direction but, as expressly stated (11, p. 180), not to cases in which true changes may occur in both directions. The authors add that the assumption "that the true change takes place in one direction only is not easily defended when talking about attitudes." The Lazarsfeld index is not unrelated to our T measure. When the proportion of consistent cases is relatively stable over a set of items, x is positively correlated with T.

Ferber (1) set up a small consumer panel and asked the panel members identical questions several times at monthly intervals. He addressed himself to the following question: "To what extent have the replies given by the respondents to the same question remained the same over time periods of varying length?" (10, p. 257f.).⁸ The question calls for C, the proportion of people giving consistent responses, as a criterion. Since some C responses are expected by chance, Ferber

uses $\frac{C}{\text{Exp } C}$ as his statistical measure; Exp C is

the consistency which might be expected by chance if the two responses were entirely independent, given the frequency of the marginals.

Although C is not a satisfactory measure for our purposes, we might think of following Fer-

ber's lead and take $\frac{L}{\text{Exp } L}$ as the statistical meas-

ure of turnover. In making use of this measure, as in the case of using x , similar regularities were observed as with T. Yet we shall not use Exp L as our criterion because the relation of observed frequency of losses to chance frequency is of little interest to us. In our case the stability or change in answers is not random. It can be demonstrated that the second response is not independent from the first one and from the developments which have taken place in the period between the two measurements. The relative distance of observed L from maximum and minimum L concerns us much more than the relative distance of L from the chance situation. In addition, not only L but also Exp L is by necessity negatively correlated with M Ch. Sometimes, then, both L and Exp L are close to Min L, while at other times both are close to Max L; this crucial difference is not indi-

cated by the measure $\frac{L}{\text{Exp } L}$.

In constructing the measure T, we have not taken misclassifications into account although clerical errors, interviewing errors, and reporting errors occur in all surveys and therefore, as set forth earlier, an observed change in attitudes is a function both of the true change and of misclassifications. Maccoby recently analyzed misclassifications resulting from unreliability of measurement in a perceptive article (15). Following her discussion, we may assume that misclassifications are random: an error is equally likely to occur for any response.⁹ In each test, then, misclassifications are proportional to the size of the response and will affect small cells differently from large cells. Since the L cells are smaller than the G cells (by definition), it can be demonstrated that the observed L is always an overestimate of the true loss (L without misclassifications).¹⁰ L is further away from Min L, or zero, than the true loss. If it is shown, as will be done in the next section, that in certain circumstances the observed L tends to be closer to Min L than in other circumstances, then it follows that such a statement would even be more true if it were possible to eliminate misclassifications. Because of the existence of misclassifications the data used represent a strong test of the hypothesis which will be studied.

⁷ Presented in Kendall (10) and attributed to Lazarsfeld on page 180. Turnover, in Lazarsfeld's terminology, denotes the proportion of changers.

⁸ We shall be concerned here with Ferber's paper only insofar as it studies changes of response in two successive tests. The discussion of turnover in the course of several interviews has been postponed for a later article.

⁹ Randomness may rightfully be assumed for clerical errors. Reporting errors are known to be biased regarding certain financial variables (e.g., amounts saved). Regarding economic attitudes and expectations, there is no evidence of bias.

¹⁰ This is put by E. Maccoby as follows: "It will inevitably be true that a higher proportion of a minority group will shift" (15, p. 359f.).

QUANTITATIVE FINDINGS

Three different sets of circumstances may be distinguished under which turnover in two successive measurements can be studied. Some responses are expected to be stable over very long periods, as, for instance, sociocultural norms or tastes assumed to be innate or acquired in early childhood. Other responses are habitual and may not change during the short period between test and retest. Other responses again depend on changing circumstances and are expected to change in the short run (14, p. 1150; 10, p. 5; 7, Chap. 3).

While Kendall's study is directed toward "characteristics which are generally considered deep-rooted or basic" (10, p. 6), we are interested in attitudes making for short-run changes in behavior. Fluctuations in economic motives, attitudes, and expectations have been studied by the Survey Research Center over the past ten years in order to determine their influence on changes in spending or saving. Katona and Mueller have constructed an index of economic attitudes (9) and studied the relationship of changes in that index to changes in purchases of durable goods. Because of their association with changes in behavior, the attitudes which constitute that index, as well as a few other related attitudes, are particularly suitable for our present purposes.

Among the economic attitudes measured several times during the past few years, we shall find some whose distribution remained substantially the same in test and retest, and some whose distribution showed substantial changes. There also are several instances where the same attitude changed from Time Point 1 to Time Point 2 and remained stable be-

tween Time Point 2 and Time Point 3 (or vice versa).

Most of the data presented in this paper are taken from a panel study. A representative sample of the urban population of the United States was drawn. Lengthy interviews were conducted with members of that sample in June 1954, December 1954, June 1955, December 1955, and February 1957.¹¹ Fourteen attitudinal questions were asked both in June 1954 and June 1955 and yielded 14 turnover tables. In December 1955, 5, and in February 1957, 12 of the questions were asked again of the same respondents. Thus we have 31 turnover tables at our disposal which are constructed from questions asked of the same population and which differ in the following respects: (a) they reflect attitudes expressed at different times (in 1954, or 1955, etc.); (b) the time span between the two measurements varies (from 6 months to 20 months); (c) the attitudes differ. Some of the questions asked for evaluations of the recent past, while others were concerned with short-range or longer-range expectations. Questions were asked about people's attitudes toward their personal financial situation as well as toward national economic trends and market conditions.¹²

The 1954-57 panel study was not the first attempt of the Survey Research Center to interview identical samples twice. Parts of the samples of Surveys of Con-

¹¹ Several further publications based on studies with the same panel, made possible by the grant from the Ford Foundation, are in preparation. One of them will describe the sample in detail and will analyze panel mortality and panel bias. A substantial part of the questionnaires dealt with spending and saving.

¹² The reader will find the wording of most questions in the parts of this paper which present data derived from individual questions.

sumer Finances, conducted for the Federal Reserve Board, were interviewed both in 1948 and in 1949; and in 1953, part of the 1952 sample was reinterviewed. Five attitudinal questions on the first occasion and four on the second occasion were asked twice of the same samples at an interval of 12 months. Thus nine turnover tables derived from Surveys of Consumer Finances can be included in our set of data.

Most of our attitudinal questions are answered in the respondent's own words (open-ended questions), and the answers are taken down by the interviewer as nearly verbatim as possible. Coders classify the answers according to pre-established categories in the central office. The classifications include "don't know" and "not ascertained." Individuals classified in either of these categories in test or retest were omitted from the turnover tables. There remained individuals classified in either of three categories:

(a) up, better, or good; (b) same, procon, or uncertain and (c) down, worse, or bad.

Aggregative Change and Turnover of Individuals

A scatter diagram (Figure 1) indicates the relation of marginal change to turnover for the 40 repeated attitude measurements. At first sight the relationships between the two measures are not very clear. We may begin by discussing some of the points on the diagram in relation to the model which postulated the existence of four cases.

First we find some data which come close to Case 1a (small marginal change and small unnecessary turnover of individual responses). Take, for instance, the point on the diagram with an M Ch of 0.8 and a T of .39 and the point with an M Ch of 0.2 and a T of .40. Both points result from asking the same question and represent the turnover from June 1954

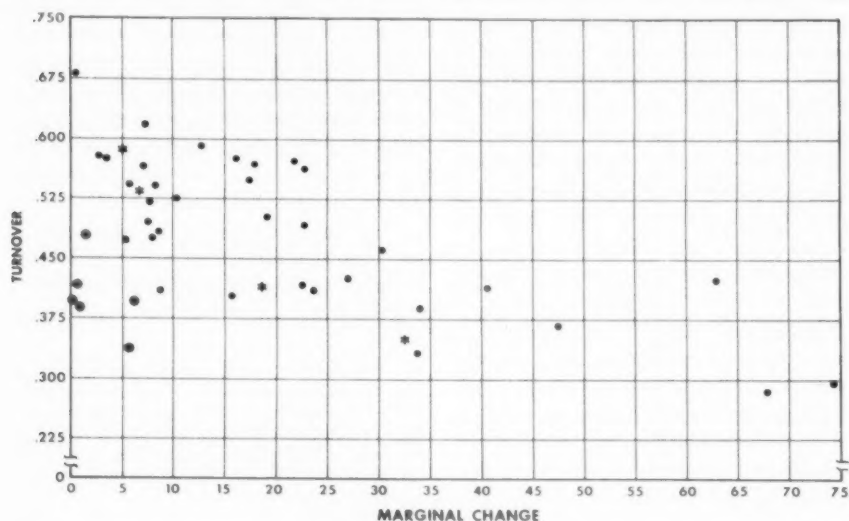


Fig. 1. Relation of Turnover Rates to Marginal Change. Each of the 40 attitudinal questions, asked twice in succession, is represented by a point. The asterisks represent clusters of attitudes.

to June 1955, and again from June 1955 to February 1957. The question read:

A few years from now, do you think you and your family will have a better position and income than you have now, or will you be in about the same situation, or even in a less satisfactory situation?

In all three surveys the distribution of the answers was practically the same. At the same time, relatively few individuals shifted. For instance, among the 827 people who gave definite answers to the question both in 1954 and in 1955, there were 6 individuals who shifted from better to worse and 4 individuals who shifted from worse to better. (These shifts may be due to misclassifications!) Although there were somewhat more people who shifted from same to better or from better to same, we find a small rate of turnover; L was 18.5 and much smaller than the highest possible L of 47.6. The data obtained in studying the turnover from June 1955 to February 1957 are similar.

Secondly, we find a number of instances resembling Case 1b (small marginal change and large turnover). As an example, we may refer to M Ch of 0.3 with a T value of .69. The question asked in June 1955 and December 1955 read:

Do you think that in the country as a whole during the next twelve months we'll have good times financially, or bad times, or what?

The two marginal distributions obtained could hardly be distinguished from each other. Nevertheless, among 757 people there were approximately 100 whose opinion was more pessimistic the second time than the first time and approximately 100 whose opinion was more optimistic the second time. L was 15.5 and relatively close to the maximum possible L of 22.6.

Case 2a (large marginal change and

small turnover) can be illustrated by the M Ch of 74.3 and the T of .30. The question read:

Would you say that at present business conditions in the country as a whole are better or worse than they were a year ago?

In June 1954, 17% said better and 53% said worse; in June 1955, 51% said better and 12% said worse. Among 818 respondents, only 8 shifted from better to worse. L was 8.7 and relatively distant from the maximum L of 29.3.

Similarly, we find a substantial marginal change in price expectations measured in 1948 and 1949 (67.8). Early in 1948 the largest proportion of consumers thought that prices of things they buy would go up during the next year, while early in 1949 the majority thought that prices would go down. L was 10.8, Max L 37.8, and T .29.

Instances of very large marginal changes coupled with large turnover (high T) are not found in our collection of turnover tables. But close to Case 2b comes, for instance, the M Ch of 21.8 with a T of .57. In answer to the question:

What do you expect prices of household items and clothing will do during the next year or so, stay where they are, go up, or go down?

many more said "down" in June 1954 than in June 1955; the shift occurred mainly from "down" to "same." At the same time, shifts in the opposite direction were not infrequent. L was 16.2 or closer to the Max L of 28.3 than to zero. (The data presented in Table 8, with M Ch of 17.9 and T of .57, may also be cited as resembling Case 2b.)

What determines the relationship between M Ch and T? Is it the attitude itself? The assumption that responses to certain attitudinal questions will always be either of Type 1b or Type 2a can be

contradicted. A case in point is the question about expected business conditions in the country as a whole. It was given above as an example of Case 1b (small marginal change and large turnover) during the period from June 1955 to December 1955. The same question was also asked of the same sample in June 1954. The data for June 1954-June 1955 yielded the substantial marginal change of 40.6, many more people being optimistic regarding the economic outlook in June 1955 than in June 1954. The large marginal change from June 1954 to June 1955 was associated with a T value of .41, while the absence of a marginal change in the second half of 1955 ($M\ Ch = 0.3$) was associated with a T of .69, as reported above. Thus the same question asked from the same people once yielded a large marginal change and a small turnover, and once a small marginal change and a large turnover.

Similar findings were obtained with several other questions. For instance, the question:

Do you think now is a good time or a bad time to buy large household items such as furniture, refrigerator, TV, and things like that?

was also asked at the same three dates. From June 1954 to June 1955, $M\ Ch$ was 34.0; from June 1955 to December 1955, it was 2.5. In the first period, we obtained a T value of .39; in the second period, .58.

On the other hand, there are good reasons to believe that belonging to Case 1a (small marginal change and small turnover) is a function of the attitude studied. We find three questions in our collection regarding which one could have predicted *a priori* that they would yield small marginal changes and small turnover rates. Take first the following question:

How do you people feel about your present income; do you think it is about what you ought to be getting, or not?

This question, asked three times and yielding therefore two turnover tables, is easily understood and relates to relatively permanent or deep-seated notions which are not expected to change over short periods during which most people's income has not changed substantially. The same is true of the question quoted above which asks people whether their position and income will be better or worse a few years from now. Two turnover tables obtained through this question were cited as instances of Case 1a. Finally, we may include in the same category two turnover tables based on short-range personal expectations.

Do you think a year from now you people will be better off financially, or worse off, or just about the same as now?

The six observations relating to the three questions cited have been encircled on Figure 1.

That the three attitudes, yielding six turnover tables, represent a subset of our data which needs to be differentiated from the other data can be demonstrated by using a measure of consistency (C). The general assumption is that answers to certain attitudinal questions are more "personality determined" and less situationally determined, while it is the other way around with respect to answers to other questions (especially those which are intended to elicit subjective notions or short-run attitudes dependent on changing circumstances). In the first instance we should expect less learning than in the second instance. In our turnover tables this should be apparent through a higher rate of consistency or repetitiousness in the first than in the second instance. A measure of repetiti-

TABLE 2
DATA ON MARGINAL CHANGE AND TURNOVER
A: Summary of All Turnover Tables

Marginal Change	Average of L	Average of Max L	Average of T	No. of Attitudes
Less than 3½	23.8	48.2	.503	7
5 to 12½	23.9	48.2	.509	14
16 to 30½	17.8	37.5	.494	12
34 and larger	12.9	37.1	.358	7
				40

B: Summary of Turnover Tables Relating to Short-Run Attitudes

Marginal Change	Average of L	Average of Max L	Average of T	No. of Attitudes
Less than 3½	23.8	39.8	.613	3
5 to 12½	24.8	48.5	.518	12
16 to 30½	17.8	37.5	.494	12
34 and larger	12.9	37.1	.358	7
				34

Note.—Rank correlation between M Ch and T = $-.689$ (Part B).

ousness has been developed¹³ and yields the highest values for the 6 observations encircled in Figure 1 and lower values for every one of the other 34 observations.

We shall now group our data according to the size of marginal change. Table 2A presents a summary of all 40 turnover tables at our disposal, and Table 2B the summary of 34 turnover tables. In Table 2B, the six observations which we deem to belong under Case 1a are omitted so

as to study the relation of small and large marginal changes to turnover rates for short-run attitudes. We find in Table 2B evidence for the following generalization: The larger the marginal change, the smaller the "unnecessary" turnover of individual responses. Subsets of our data, for instance the 1954-55 or the 1955-57 turnover tables considered separately, yield the same regularities.

In analyzing attitude changes it has been repeatedly argued that changes in answers to individual questions are much less reliable than changes derived from clusters of questions (9). Three such clusters have been computed from the material available in both June 1954 and June 1955. The first cluster contains six questions asking for evaluations of *present conditions*; the second, four questions regarding *one-year expectations*; and the third, three questions regarding *five-year expectations*. Finally, we have at our disposal the turnover in the *index of consumer attitudes*, for which time series have been published recently (9); this index consists of six questions, some of which fall into each of the three clusters. Table 3 contains the data on the turnover of our four group measures. We again find that, the larger the marginal change, the smaller is T.

Conclusions

We may now formulate the following generalization applicable to subjective notions and expectations which do not represent deep-seated and enduring convictions:

If two successive measurements yield similar aggregate distributions, then it is likely that many individuals have changed their attitudes in one, and many others in another, direction. If in the aggregate there is a substantial change in

¹³ The statistical measure of repetitiousness or variability will be presented in forthcoming papers dealing with change in attitudes over several surveys (a problem mentioned in Footnote 7) and with changes in nonverbal behavior (spending, saving) over several years. The measure derives from a computation of coefficients of intraclass correlations. It reaches its maximum value when the frequency of identical answers (or of identical behavior) is maximized, a zero value when the actual observations correspond to what would be expected if the consecutive observations were independent of each other, and a minimum value when the frequency of identical answers (or behavior) is minimized. The measure has been developed by Leslie Kish of the Survey Research Center.

attitudes, then it is likely that the changes will be predominantly in one direction; the population then tends to fall into two major groups: those who shifted in one direction, and those who did not change at all.

These findings were not unexpected; they are in accord with hypotheses formulated before embarking on the studies. Although the findings do not prove the correctness of the hypotheses, it may be mentioned that the hypotheses were derived from sociopsychological assumptions about contagion and social learning, as well as from earlier findings obtained without the use of the panel technique. When in earlier years consumer attitudes showed large changes in the aggregate (as, for instance, in 1950-51), all subgroups of the population showed similar changes. When, however, measurements with two successive samples indicated substantially unchanged distributions of attitudes (for instance, in 1952), some occupational, regional, or income groups showed a shift in one direction and some other groups in the opposite direction.

From the point of view of utilizing survey research, our findings indicate first that small changes in the distribution of subjective notions and expectations must be viewed with caution. Substantially unchanged distributions, obtained at two successive occasions, do not imply that very few people changed their opinions. On the other hand, substantial shifts in aggregative distributions may be viewed with much less skepticism. To be sure, it is always valuable to make certain through panel data that most individual shifts were in the same direction. But even without recourse to panel data, such an assumption appears to be justified in most cases.

Our generalization may be better un-

derstood if we contrast it with the discussions of Lazarsfeld and Kendall. In the theoretical scheme of Lazarsfeld, "turnover," that is, the proportion of changers, is an index of uncertainty or instability:

If the turnover is large, it indicates that the opinion or behavior is unstable. We know that people feel uncertain and that propaganda may be effective, or that clarification and education are required (13, p. 232).

Similarly, Kendall identifies "turn-over" with instability of response due to vacillation by respondents as shown, for instance, in the following passage:

Instability of response (turnover): Why is it that, under certain conditions, respondents vacillate in their answers to repeated questions? (10, p. 29).

No doubt, these authors correctly describe one type of change in response. It does happen that respondents vacillate or that the response is unstable because clarification and education are required. But our findings indicate that responses may also change under different circumstances. Rather than being the result of uncertainty, change may be due to acquisition of experience or learning which took place on the part of very many people at about the same time. If a high proportion of changers is associated with "uncertainty" (or with contradictory developments of a personal nature), the data will resemble Case 1b in our model (relatively high T value); if a high proportion of changers is associated with "social learning," the data will resemble Cas 2a (relatively low T value).¹⁴

¹⁴ Turnover due to true changes rather than to vacillations has been considered by Lazarsfeld and his associates in connection with before-after experiments. In discussing, for instance, the showing of a film on antisemitism to people whose level of antisemitism was measured both before and after the showing of the film, Glock speaks of "the effect of a stimulus in producing

On the Origin of Changes in Attitudes

When in two successive surveys some people express the same attitude and some change their attitudes, we have two methods at our disposal for explaining the difference between the two groups. We may determine whether the two groups—those with stable attitudes and those with changing attitudes—differed in other respects in the *first* survey, with the aim of finding out whether any such initial differences may account for what happened to their attitudes later. Alternatively, we may study data obtained in the *second* survey to find out whether any developments occurred in the period between the two surveys which would differentiate between the two groups. The two kinds of studies will be called Approach I and Approach II, respectively.

These two approaches to the study of the origin of stability or change in attitudes are related to the distinction previously made between misclassifications, in the broadest sense, and acquisition of experience. Naturally, it is only by inserting appropriate questions in the second survey that we can study whether new experiences, either of a personal or a general nature, have been acquired in the interval between test and retest. At the other extreme, observed changes in attitudes may be due to incorrect recording in the one or the other survey. More important, we may think of the answers to a question as falling on a continuum: Some people who say "better" the first time may have very different attitudes

from those who say "same," but it may also happen that the true attitudes were relatively close and were distinguished somewhat arbitrarily in our crude system of measurement. In the latter case a recorded shift from "better" to "same" may not represent a significant change.¹⁵ Thus it may happen that some people who gave Answer A did not really belong to the A group and may be expected to shift to Answer B in the light of characteristics or other attitudes measured in the first survey.¹⁶

The two approaches are not alternatives. Holding an attitude with little conviction may facilitate the acquisition of experiences which result in changing that attitude. Thus, we should expect to find circumstances in which both Approach I and Approach II contribute to an "explanation." Yet, interestingly enough, at least one case will be found in which Approach I will not result in an explanation and Approach II will.

Findings: Origin of Changes in Two Short-Run Expectations

Detailed studies were carried out regarding two of the turnover tables summarized before. Table 4 presents the basic data. Both questions were asked of the same sample, once in June 1954

¹⁵ Eleanor Maccoby calls attention to this possibility and illustrates it with a graph (15, p. 361).

¹⁶ Procedures similar to what has been called here Approach I have been used in analyzing shifts by election panels. For instance, those whose intended vote shifted, say, from the Republican to the Democratic candidate were studied regarding their "class interest" (2, p. 247). It was found that "Among those people who planned to vote for Dewey in August, those whose class interest was in conflict with their vote intention were much more likely to abandon Dewey than those where such conflict did not arise." Such initial differences were sometimes called cross-pressures (12, p. 512).

change" in attitudes (2, p. 243f.). Under such conditions the findings about the rate of turnover were often similar to our findings on attitude changes resulting without experimental stimuli. Sometimes, however, even though the experimental stimulus brought forth a substantial marginal change, reverse changes were also observed and were called the "boomerang effect."

TABLE 3
MARGINAL CHANGE AND TURNOVER FOR CLUSTERS OF ATTITUDES

	M Ch	M Ch*	L	Max L	T
5-year expectations (6X6 table)	12.7	5.0	354	602	.588
1-year expectations (12X12 table)	36.1	6.6	534	996	.536
Present conditions (12X12 table)	179.4	32.6	325	929	.350
Index of consumer attitudes (12X12 table)	102.0	18.5	356	878	.416

* M Ch recalculated so as to make it comparable to 3X3 tables. The data presented on the size of marginal change in the first column are not comparable to those presented in Table 2. In a 12X12 table the maximum number of steps with which changed responses are multiplied is 11; in a 3X3 table it is 2. If, then, we divide M Ch as presented in the first column of the table by 11/2 (or in one instance by 5/2), we obtain an M Ch of 5.0 for five-year expectations, of 6.6 for one-year expectations, of 18.5 for the index, and of 32.6 for present conditions. These data with their respective T values have been added to Figure 1 in the form of asterisks.

and once in June 1955. One of the questions:

Do you think that a year from now you people will be better off financially, or worse off, or just about the same as now?

resulted in a very small marginal change. The other question:

Do you think that in the country as a whole during the next twelve months we will have good times financially, or bad times, or what?

resulted in a substantial marginal change. These two questions were chosen so that the origin of changes in both personal financial and business expectations could be studied. The turnover rates obtained in the two instances are similar; neither is substantial.

Table 5 contains the data obtained by applying the two approaches to the first question. Groups OO and OM, as well as Groups MM and MO, expressed the same attitudes in June 1954. Nevertheless, there are substantial differences between the pairs of groups in income, in age, and in education. Those who became more pessimistic (OM) have lower average incomes, are older, and have less education than those who remained optimistic (OO). Similarly, those who became optimistic (MO) have somewhat

TABLE 4
BASIC DATA FOR STUDIES OF ORIGIN
OF CHANGES IN EXPECTATIONS

A. Expected Personal Financial Situation during Next Year					
June 1954					
	Better (O)	Same (M)	Worse (P)		
June 1955					
Better (O)	20.5	14.7	1.3	36.5	
Same (M)	13.3	40.6	3.6	57.5	
Worse (P)	1.2	3.9	0.9	6.0	
	35.0	59.2	5.8	100.0%	
B. Expected National Business Conditions during Next Year					
June 1954					
	Good (O)	Pro-con (M)	Bad (P)		
June 1955					
Good (O)	46.8	20.0	13.5	80.3	
Pro-con (M)	6.0	7.0	3.2	16.2	
Bad (P)	1.5	0.6	1.4	3.5	
	54.3	27.6	18.1	100.0%	

Note.—M Ch = 1.3; T = .48; N = 850. Group OO, 20.5%, in first measurement to be compared with Group OM (including OP) of 14.5%. Group MM, 40.6%, in first measurement to be compared with Group MO of 14.7%.

Note.—M Ch = 40.6; T = .41; N = 844. Group OO, 46.8%, in first measurement to be compared with Group OM (including OP) of 7.5%. Group MM, 8.4% (including PP), in first measurement to be compared with Group MO of 23.2% (including PM).

higher income, are younger, and have more education than those who remained pessimistic (MM). Personal financial developments prior to the first test likewise contribute to an explanation of attitude change. In the OO group we find more who were better off than in the OM group, and in the MO group more than in the MM group. Finally, the evaluation of prevailing conditions in the first survey was more optimistic in the OO than in the OM group. Thus we conclude that data from the first survey help account for the difference between stable and changing expectations to a considerable extent.

Additional explanations are provided by the second approach. The proportion of Group OO whose income rose and whose evaluation of their personal financial situation improved is much higher than the proportion of Group OM. Between MM and MO we likewise find differences in the expected direction, but they seem to be less pronounced. People's opinions about the conditions in the industry in which they work also show differences which indicate that what happened to the two pairs of groups is not unrelated to stability or change in their personal expectations. It must be stressed that we explain group differences. As seen in Table 5 there are individuals in Group OM (the group which became more pessimistic) who said they were better off and whose income increased. Accounting for changes in attitudes by individuals is a task not undertaken here; it would require a different kind of interviewing.

The last part of Table 5 contains data related to acquisition of information about business conditions in the nation. The members of the panel were asked several questions in order to determine

whether or not they had "correct information" about what had happened to the economy in the year between the two measurements.¹⁷ It appears that Group OO was somewhat better informed than Group OM. There are hardly any such differences between Groups MM and MO.

We conclude, therefore, that the stability or instability of personal financial expectations is well accounted for, both through initial differences between the stable and unstable groups and through changes in the personal finances of the groups in the year between the surveys. This statement is especially true of the differences between Groups OO and OM.

Turning to an analysis of stability or change in the one-year economic outlook (Table 6), we find consistent differences between Groups OO and OM when we apply our first approach. The small deviant group which became more pessimistic has lower incomes, is somewhat older, has less education, and has evaluated the prevailing conditions less favorably than the group which remained optimistic. But the differences between Groups MO and MM in all these respects are extremely small or nonexistent. The same is true of changes in personal financial conditions prior to the first test (not shown in the table). Thus improvement in the general economic outlook, which in this case brought about a substantial marginal change, cannot be accounted for by initial differences between the changers and nonchangers.

Approach II reveals that, between the two surveys, changes occurred in income and in people's evaluation of their personal financial situation. These develop-

¹⁷ See the Appendix for a description of the technique used.

TABLE 5
PERSONAL FINANCIAL EXPECTATIONS
June 1954-June 1955

APPROACH I	OO	OM	MO	MM
1954 Median income	\$6,570	\$5,500	\$5,300	\$4,870
Median age	39	44	42	51
Education:				
Grade school	20%	33%	24%	48%
High school	48%	51%	53%	35%
College	32%	16%	23%	17%
Personal finances prior to first test:				
Better off	56%	39%	32%	21%
Worse off	20%	21%	26%	20%
Difference	+36	+18	+6	+1
Index of "Evaluation of Present Conditions" in first test:				
Average	7.2	5.7	6.1	5.9
APPROACH II				
Personal finances in year between two tests:				
Better off	67%	32%	36%	18%
Worse off	8%	21%	18%	18%
Difference	+59	+10	+18	0
Income change in year between two tests:				
Making more	55%	20%	40%	22%
Making less	0%	21%	19%	12%
Difference	+46	+8	+21	+10
Conditions in respondent's industry in year between two tests:				
Better	54%	30%	49%	27%
Worse	7%	17%	13%	18%
Difference	+47	+13	+36	+9
Information received on economic developments during year between two tests:				
Hardly any correct information	11%	32%	26%	32%
Some correct information	60%	52%	54%	50%
Much correct information	29%	16%	20%	18%
Mean number of questions answered correctly	4.45	3.44	3.89	3.48

TABLE 6
ONE-YEAR ECONOMIC OUTLOOK
June 1954-June 1955

APPROACH I	OO	OM	MO	MM
1954 Median income	\$6,250	\$5,000	\$4,600	\$4,400
Median age	46	49	46	48
Education:				
Grade school	29%	30%	42%	44%
High school	42%	45%	42%	42%
College	29%	10%	16%	14%
Index of "Evaluation of Present Conditions" in first test:				
Average	7.1	5.7	5.8	5.5
APPROACH II				
Personal finances in year between two tests:				
Better off	30%	25%	30%	23%
Worse off	14%	25%	15%	28%
Difference	+25	0	+15	-5
Income change in year between two tests:				
Making more	37%	22%	32%	23%
Making less	10%	25%	12%	33%
Difference	+27	-3	+20	-10
Had conversation on economic trends in year between two tests:				
Optimistic	15%	6%	8%	6%
Pessimistic	6%	17%	12%	16%
Difference	+9	-11	-4	-10
Information received on economic developments during year between tests:				
Hardly any correct information	14%	40%	27%	63%
Some correct information	56%	55%	55%	33%
Much correct information	30%	5%	18%	4%
Mean number of questions answered correctly	4.39	3.04	3.64	2.15

ments seem to contribute toward the explanation of the attitudinal change. More pronounced still are the differences in the extent of correct information received on economic developments that have taken place during the year between the two tests. In Group OO we find many more people who answered substantially all questions correctly than people who answered hardly any questions correctly; in Group OM the latter are very frequent and the former practically nonexistent. Similarly, very sizable differences exist between the MO and the MM groups, Group MO being much better informed. The differences in information between these groups are much more pronounced than those obtained in Table 5. More important still, one may discount the differences in information in Table 5 by assuming that they reflect primarily differences in education. In Table 6, we find hardly any differences in education between Groups MM and MO, and yet the differences in economic information are substantial.

Table 6 contains some further data which point in the same direction. In answer to the question:

During the last few months have you discussed with other people whether business conditions are getting better or worse?

substantially the same proportion of people in each of our four groups answered in the affirmative. But, in replies to a follow-up question which inquired about the content of the conversations, we find that some groups had more conversations of an optimistic nature and others of a pessimistic nature. These differences are again in the expected direction.

Since correct information about developments in 1954-55 referred, without exception, to favorable developments, we

may restate the findings as follows: Two of the groups, OO and MO, acquired information about favorable developments in the economy prior to the second survey. Such learning appears to be reinforced through social facilitation and represents a current which is hard to swim against. The acquisition of information corresponds with a change in attitudes on the part of Group MO. It probably also corresponds with a change in attitudes on the part of members of Group OO; here, however, our crude measurements were unable to detect a change in attitudes because those who gave the most optimistic recorded answer in the first survey ("good") could not improve their attitudes further.¹⁸

Thus somewhat different explanations emerge for the frequent improvement in attitudes toward national business conditions on the one hand (Group MO in Table 6), and the much less frequent improvement in people's attitudes toward their personal financial situation (Group MO in Table 5) on the other hand. Since we are dealing with changes in two attitudes among the same people at the same time, a further step in the analysis is possible: a comparison of the changes in the two attitudes. Of particular interest are people whose personal financial expectations deteriorated from June 1954 to June 1955 (the L group in Table 4A consisting of 18.5% of the sample). How did the business expectations of these

¹⁸ What has been said about Group MO also applies to Group PO (13.5%). Data on PO are not shown in Table 6 and are not conclusive because the corresponding PP Group is too small for comparisons. Yet it may be added that, according to Approach I: PO does not differ from MM, income gains are less frequent among PO than among MO, but PO has a substantial amount of correct information.

people change between the same two dates? We find that: (a) 8.0% fell in the cell OO in Table 4B—remained optimistic regarding business conditions; (b) 6.5% fell in cells MO, PO, or PM—became more optimistic; (c) 2.0% fell in cells MM and PP—remained relatively pessimistic; (d) 2.0% fell in cells OM, OP or MP—became more pessimistic.

Among people classified under *d* and possibly under *c* we may discern correspondence between the two changes, or even an influence of personal financial expectations on business expectations. Classifications *a* and *b* contain, however, a much larger proportion of the people whose personal financial attitudes deteriorated. The great majority of this group maintained optimistic business opinions or even strengthened them. If information on general economic developments is relevant for the improvement in business expectations, we must conclude that a pessimistic turn in opinions about personal finances lost in competition with good business news. The economic information constituted a current which was difficult to resist.

Also of interest is a second group: those whose personal financial expectations remained unchanged on a nonoptimistic level (Groups MM and PP in Table 4A, 41% of the sample). In checking how the national business outlook of these people changed at the same time, we find that 17.5% were optimistic both times, 16.5% became more optimistic, and only 7.5% remained pessimistic or became pessimistic. Again, among most of these people, business attitudes developed in a manner different from personal financial attitudes.

The same conclusion may be reached by studying personal financial experiences rather than changes in personal

financial expectations. As seen in Table 6, some members of the sample reported in June 1955 that they were personally worse off at that time than a year earlier. Yet almost three-fourths of those who made such reports fell into cells OO, MO, PO, or PM in Table 4B. Thus the business expectations of the great majority of people who said they were worse off financially were unaffected by their personal experiences.

Findings: Origin of Changes in Attitude Index

The factors contributing to stability and change in attitudes were also studied regarding the cluster of attitudes represented in the index of consumer attitudes. Among the six questions included in the index are the two analyzed in Tables 5 and 6. Each optimistic answer was given a value of 2, the middle position a value of 1, and each pessimistic answer a value of 0. Therefore, we have a 12-point scale with 12 being the most optimistic value. The turnover from the first to the second survey has been classified in eight groups.

Three of these groups are made up of people who have been consistent. Consistency is defined as having the identical scale value in both surveys (June 1954 and June 1955) or being one step removed. In other words, say, 8 in the first survey and either 7, 8, or 9 in the second survey is called consistent. We define Group OO as having scale values of 10, 11, or 12 in the first survey; MM as having scale values of 7, 8, or 9 in the first survey; PP as having scale values of 6 or less in the first survey; all three groups changed by one point or less.

Then we have three groups which show gains, that is, became more optimistic in the second than in the first survey. Group PM was fully comparable with

Group PP in the first survey (scale values of 6 or less) and became more optimistic in the second survey (increase in scale value by 2, 3, or 4). Group PO differs from PM in that it became much more optimistic in the second survey (increase by 5 or more). Group MO shows gains from a middle position. There are no gainers among those who were optimistic in the first survey.

We have two loss groups. Group OM had a scale value of 10, 11, or 12 in the first survey and became more pessimistic (decreased by two or more steps). The small Group MP consists of people with scale values of 7, 8, or 9 in the first survey who were more pessimistic in the second survey than in the first.

Approach I (Table 7) contributes to an explanation of stability or change. The differences in income are especially large among those who were either O or M in the first survey, and the differences in age among those who were P in the first survey. Substantial educational differences are found among all groups. Yet the differences in the evaluation of "present conditions" are small or, in the case of the P groups, contrary to expectations.

Turning to data obtained in the second survey (Approach II), we find that income changes during the year between the two surveys were substantial and contribute to an explanation without exception. The same is true of the appraisal of changes in the condition of the industry to which respondents belong. Differences in the nature of conversations on economic trends likewise indicate that loss groups had more pessimistic conversations than consistent groups or gain groups. Finally, looking at the data on information received, we find very substantial differences among the three groups which were M in the first survey.

We conclude then, in the light of data presented in Table 7, that initial differences among the groups, personal developments in the year between the two tests, as well as information obtained on national economic developments may account for stability or change in the index of consumer attitudes. Some of the differences, such as becoming or not becoming more optimistic on the part of originally pessimistic people, seem to hinge primarily on income changes and related personal developments. Regarding some other changes, interaction of various influences must be given a greater role. This is not surprising because the index is constructed both from questions relating to personal finances and from questions relating to expected economic conditions.

In analyzing the findings of this section, it must be recalled that the origin of stability or change in attitudes was studied in a period in which economic conditions in the country and the financial situation of most people improved considerably. Under these conditions deterioration of attitudes by a few people was found to be associated with having little information about economic developments, with personal events of an adverse character, and with "misclassifications" (the initial relatively favorable attitudes being not too trustworthy). Turning to an attempt to understand the major change which took place during the year—the improvement in attitudes by a substantial number of people—we find: Regarding personal financial attitudes, people who become more optimistic differed from people who did not by having more favorable personal developments (as well as by having characteristics and other initial attitudes which make them more predisposed to a favor-

TABLE 7
INDEX OF ECONOMIC ATTITUDES (6 QUESTIONS)
June 1954-June 1955

	OO	OM	MO	MM	MP	PO	PM	PP
Number of cases	136	64	140	160	28	55	87	30
Per cent of sample	19.9	9.2	19.8	22.9	3.9	7.9	12.2	4.2
APPROACH I								
Median income	\$7,750	\$5,950	\$5,900	\$5,220	\$4,600	\$4,450	\$4,450	\$3,970
Median age	49	46	43	47	50	40	49	53
Education:								
Grade school	21%	32%	18%	40%	50%	26%	47%	53%
High school	45%	44%	53%	40%	26%	65%	38%	44%
College	34%	24%	29%	20%	14%	9%	15%	3%
Index of "Evaluation of Present Conditions" in first test:								
Average	8.5	7.9	6.4	6.5	6.0	2.9	4.0	3.7
APPROACH II								
Income change in year between two tests:								
Making more	46%	20%	53%	27%	11%	44%	22%	13%
Making less	6%	17%	6%	13%	46%	16%	16%	43%
Difference	+40	+12	+47	+14	-35	+28	+6	-30
Conditions in respondent's industry in year between two tests:								
Better	46%	35%	43%	33%	11%	32%	22%	10%
Worse	8%	21%	4%	12%	25%	14%	13%	17%
Difference	+38	+14	+39	+21	-14	+18	+9	-7
Conversation on economic trends in year between two tests:								
Optimistic	23%	15%	10%	10%	0	11%	10%	3%
Pessimistic	6%	9%	11%	7%	20%	5%	10%	17%
Difference	+17	+6	-1	+3	-20	+6	0	-14
Information received on economic developments during year between two tests:								
Hardly any correct information	10%	14%	13%	24%	64%	35%	42%	40%
Some correct information	53%	62%	63%	55%	29%	58%	39%	53%
Much correct information	37%	24%	24%	21%	7%	7%	19%	7%
Mean number of questions answered correctly	4.68	4.29	4.35	3.82	2.13	3.32	3.29	2.77

able change). Regarding national economic attitudes, the changers are characterized by more frequent favorable personal experiences and by the acquisition of much more extensive favorable economic information. The same two considerations account for those who show an improvement in their index score.

Attitude Change in a Period in Which No Consistent Information Was Received

Up to now we have studied the origin

of changes in attitudes between June 1954 and June 1955, that is, in a period when the country's economic situation improved considerably. Further analysis is possible for the year 1956 with the same panel of respondents (based on surveys carried out in December 1955 and March 1957). In this second period economic activity on the whole remained at a high level, without showing significant changes; some sectors of the economy softened while others continued to improve. That the two periods would show

such differences was, of course, not known in advance. Yet the differences present us with an opportunity to compare two situations.

It may be useful to present a few data about economic developments during these periods. The data given refer to the quarters of the year in which the surveys were conducted. First, during the 1954-55 period: the index of industrial production rose from 124 to 138; an increase in personal incomes from 286 to 304 billions was used by consumers to step up their purchases of durable goods at a rate almost unprecedented in American economic history—from 28.8 to 35.3 billion dollars (these are seasonally adjusted annual rates for the respective quarters); and prices remained stable. Next, during the period from December 1955 to March 1957: industrial production did not change much, but prices advanced significantly (the consumer price index rose from 114.9 to 118.6); the rate of increase in personal incomes was as large as in the previous period in current dollars (increase from 315 to 336 billions), but not in real terms; consumers used their higher incomes to spend more on food and services and the like, while purchases of new automobiles were substantially smaller in 1956 than in 1955. Total consumer expenditures, considered in real terms, were at approximately the same level in the third quarter of 1955 and the first quarter of 1957.

In the first period, consumer attitudes improved considerably. Each of several questions about prospective economic trends in the country yielded large marginal changes (increased frequency of favorable answers). In the second period, most attitudinal questions showed a slight turn toward more pessimistic answers. Really substantial changes in the

distribution of answers occurred only when consumers were queried about recent past trends in prices and economic activity. Very many people gave correct, and therefore different, answers in 1957 and in 1955 to such "information questions." For instance, in June 1955, 51% of consumers said that times were better than a year earlier, and 11% said that they were worse; in March 1957, 23% said that times were better, and 29% said that they were worse (the remainder said that there was no change).

Among questions on short-range expectations which are considered in this paper, the one referring to expected economic developments during the next 12 months showed the greatest change in 1956. This is the question which is analyzed in Table 6 for the first period and which we shall now study from the point of view of the origin of changes during the second period. The basic data, presented for the first period in Table 4B, are shown for the second period in Table 8. They indicate that the marginal change was brought about by a fairly substantial turnover of individual attitudes. (The T rate is closer to the maxi-

TABLE 8
EXPECTED NATIONAL BUSINESS CONDI-
TIONS DURING NEXT YEAR
December 1955

March 1957	Good (O)	Pro-con (M)	Bad (P)	
Good (O)	50.0	7.2	2.3	68.5
Pro-con (M)	15.3	4.6	1.6	21.5
Bad (P)	7.3	1.4	1.3	10.0
	81.6	13.2	5.2	100.0%

Note.—M Ch = 17.9; T = .57; N = 717. Group OO, 50.0%, in first measurement to be compared with Group OM (including OP) of 22.6%. Group MM, 5.9% (including PP), in first measurement to be compared with Group MO of 11.1% (including PM and PO).

TABLE 9
ONE-YEAR ECONOMIC OUTLOOK
December 1955-March 1957

	OO	OM	MO	MM
1956 median income	\$6,000	\$5,300	\$4,100	\$4,750
Personal finances in year prior to second test:				
Better off	42%	27%	33%	23%
Worse off	12%	26%	24%	30%
Difference	+30%	+1%	+9%	-7%
Information received on economic trends during year before second test:				
Hardly any correct information	14%	27%	33%	35%
Some correct information	45	49	47	49
Much correct information	41	24	20	16
Mean number of questions answered correctly	4.07	3.48	3.25	3.16

mum possible T rate than to zero.) In looking for an explanation of these changes, only a limited number of data were found to be relevant; therefore we shall restrict our presentation to them.

We shall look first at the group of people whose attitudes improved (Group MO). In the first period (Table 6), this was a large group which was responsible for the over-all improvement; in the second period (Table 9), this was a small group whose attitudes partly offset more frequent changes in the opposite direction. We find in Table 9 that the incomes of Group MO are slightly lower than of Group MM; therefore the attitude change cannot be explained by differences in income. Correct information received on economic trends likewise does not contribute to an explanation of changes in attitudes. In the first period, this was the crucial indicator: Group MO knew much more about the favorable developments in the economy than Group MM. In the second period, there is no such difference. There remain some differences in the evaluation of personal financial developments. Although in both Group MO and MM there were many people who felt better off, as well as many people who felt worse off, there are differences between

the two groups in the expected direction.

Turning now to those whose attitudes became more pessimistic (Group OM), we may recall that here again, as in Table 6, several significant explanatory variables could be discerned, including large differences in the amount of correct information received between Groups OO and OM. In the second period (Table 9), we find some differences, although most of them are not quite as pronounced as in the first period. Group OM is not quite as well informed as Group OO, is more frequently worse off, and has somewhat lower income.

While in the first period correct information represented, without exception, favorable information, in the second period news was conflicting and a well-informed person acquired information about both favorable and unfavorable economic developments (see Appendix). Therefore, one may think of comparing people who knew of favorable trends with people who knew of unfavorable trends, rather than of contrasting well-informed and badly informed people. This type of analysis was carried out with two questions, the answers to which showed the most pronounced split among the respondents. About the same proportion of the panel said (a) that unemploy-

ment increased in the year prior to March 1957 as said that it did not increase, and (b) that fewer cars were sold in 1956 than in 1955 as said that this did not happen. The answers on unemployment show some relation to attitudes: In Group OM we find a much larger proportion of those who thought that unemployment increased than in Group OO. The answers on automobile sales do not show much relation: the proportion of people who knew that car sales were lower in 1956 than in 1955 was similar in the different groups. Possibly the interpretation of this information—the notion of how the decline in automobile sales would affect the future course of the economy—differed among members of the groups. Alternatively, it is possible that information received in the second period should not be viewed as an explanatory variable for observed changes in attitudes. In any case, in the second period we cannot speak of a “current of information” which uniformly influenced the sentiment of broad groups of people.

We learn from this analysis that under certain conditions—such as those which prevailed in the first period (1954-55)—information is salient, uniform, and influences people's opinions and attitudes in the same direction. Under other conditions, when conflicting news about slight favorable and slight unfavorable trends are transmitted—as in the second period (1956)—uniform learning does not take place and some people's attitudes change in the one, and some people's attitudes change in the other, direction. Probably the differences between the two situations depends both on the extent of developments (large or small changes in the economy) and on the uniformity of changes (whether or not the reported changes are all in one direction). In the

first situation, which is most relevant for business cycle analysis, it was possible to establish positive relations between information received and attitude changes; while in the second situation, it was not possible to do so.

Some Effects of Attitude Change

Attitudes are predispositions to action. A major purpose of studying expressed opinions and expectations is to relate them to nonverbal behavior. The function and predictive value of economic attitudes has been analyzed on the aggregative level by relating changes in the distribution of attitudes (in samples representative of all consumers) to durable goods purchases of the American people (see especially 9). Tests with individuals have been carried out by studying the purchases of people who are or have become optimistic in comparison to the purchases of people who are or have become pessimistic (16). A few such comparisons, relating to groups singled out for study in the preceding section, will be presented here. As an introduction, it must be said again (see 6) that individual tests are expected to show a weaker relation of attitudes to purchases than are aggregative tests. One of the reasons for this expectation is that individual spending behavior is influenced by a variety of factors which may cancel out in the aggregate. For instance, an optimistic person may not make any purchases in a given period because he has bought several such goods in the preceding period, or a pessimistic person may buy a car because his old car broke down.

The simple and crude measure of durable goods purchases used in our test, described in detail in (16), is the number of transactions by each individual family, first, during the year between two succes-

sive surveys (June 1954 to June 1955) and, second, in the six-month period following the second survey (in the second half of 1955). Purchases of one or several automobiles, of large household goods, of a few selected luxury or hobby items, and additions or large repairs to homes were included in the transactions. A scale was constructed ranging from 0 to 5. In the year 1954-55, the average family made approximately 1.5 transactions; in the second half of 1955, about 1.0 transactions.

Calculating the average number of purchases or transactions for each of our groups of families yields data of some interest but does not suffice. Income is an important determinant of durable goods purchases and there are, as shown in the tables in the preceding section, substantial income differences between some of our groups. Therefore, for each attitude group the "expected number of purchases" was calculated, based on the incomes of the members of the group (16). The relation between the actual number and the expected number of purchases provides us with a measure reflecting the impact of attitudes beyond what could be accounted for by income.

In comparing the 1954-55 purchases of pairs of groups which had the same attitudes in June 1954 and different attitudes in June 1955 (for example, the purchases of Group MM with those of MO), should we expect to find any differences? We may answer this question in the affirmative by assuming that the change in attitudes was evenly distributed over the 12-month period, or even occurred overwhelmingly early in the period. Following the second measurement, in the second half of 1955, we should expect Group MO to make more purchases than Group MM since the initial attitudes of

the two groups were different; yet in doing so we disregard the influence of changes in attitudes which may have occurred between June and December 1955.

We find in Table 10A that the change in personal financial expectations affected purchases in both periods. Group OO purchased more than OM, and Group MO more than MM. The differences in the second half of 1955 indicate that attitudes do matter. The differences in the year 1954-55 may be related, in addition, to findings presented in Table 5: Indications for the forthcoming attitude changes were available already in June 1954 (see Approach I), so that we have reason to believe that some attitude changes had taken place shortly after the first measurement.

Regarding changes in the general business expectations (Table 10B), the purchases of the four groups are found to be substantially the same in 1954-55. In the second half of 1955 we find sizable differences in the expected direction. To explain the first finding, we may assume that the information about the changes in business conditions came late during the 12-month period. Evidence supporting this assumption comes from surveys toward the end of 1954, as well as from an analysis of business cycle developments. We may also recall that in this case we found no initial differences between Groups MO and MM (Approach I). This finding also points toward a relatively late shift in attitudes.

According to Table 10 the 1954-55 purchase rates of the initial O groups (people who were optimistic in June 1954) were not higher than those of the initial M groups. But, on the basis of the more comprehensive index of consumer attitudes, those who were O in June 1954

TABLE 10
NUMBER OF DURABLE GOODS PURCHASES

	1954-55		Second Half of 1955	
	Actual	Actual in % of Ex-pected	Actual	Actual in % of Ex-pected
A. Personal Financial Expectations (see Table 5)				
Group OO	1.82	110%	1.20	114%
Group OM	1.45	94%	.93	94%
Group MO	1.69	109%	1.05	105%
Group MM	1.46	93%	.88	92%
B. General Business Expectations (see Table 6)				
Group OO	1.53	99%	1.09	105%
Group OM	1.49	104%	.80	85%
Group MO	1.42	103%	.90	106%
Group MM	1.45	105%	.85	90%

are found to have had a purchase rate of 107% in 1954-55; those who were M, a purchase rate of 102%; and those who were P, a purchase rate of 86% (16, Table 2).

IMPLICATIONS AND CONCLUSIONS

What remains to be done is to discuss the consequences of the findings reported in this paper and to connect them with earlier research in economic psychology. The findings are relevant for the evaluation of survey research, the study of business cycles, and the theory of social behavior.

Survey Research

Survey data have been used frequently for purposes of prediction. When, for instance, surveys conducted with representative samples of the population revealed that intentions to buy durable goods had become more numerous and expectations regarding personal finances and economic developments more optimistic than, say, 6 or 12 months earlier, it was concluded that consumers willingness to buy had become more pro-

nounced. Similarly, in case of deterioration of attitudes, it was concluded that willingness to buy had declined. Such conclusions, based on observed relations between attitudes and subsequent action, may be subject to qualification on two grounds. It has been argued that it is necessary for the attitudes established in a survey to remain unchanged for quite a while—how else could one make valid predictions for the future? Secondly, and this is closely related to the first argument, changes in attitudes have been called irrelevant on the ground that they may have been caused by unreliable measurements or vacillations by respondents. In assessing the potential usefulness of survey research, we have reason to doubt the relevance of both arguments.

We must agree that sometimes the future may appear most uncertain, and then expectations may be based on guesses and people may vacillate. In such a situation, however, so it appears on the basis of the present studies, two consecutive distributions of attitudes are likely to remain similar, and the "prediction" derived from the attitudinal data will consist of the statement that no radical changes in either direction are probable. When, on the other hand, two consecutive distributions show substantial changes, the preponderant direction of change by individuals tends to coincide with the marginal change and the conclusion that consumer sentiment has improved or has deteriorated is warranted. Is it probable that such a conclusion arrived at, say, in June will have some relevance also in July or September of the same year? We have reason to answer this question in the affirmative, provided no unexpected important developments occur in the months immediately following the survey.

Analyzing stability or change of consumer attitudes, we rely on changes in the answers to several questions. By constructing an index of economic attitudes from expectations expressed about personal finances and national business and market conditions, we reduce the impact of occasional unreliable measurements and vacillations. In addition to inquiring about expectations, we also collect data about people's reasons for them. By asking to what people attribute their optimistic or pessimistic opinions—the usual question is "Why do you think so?"—we of course do not receive information about deep-seated motivational factors. Yet information even about superficial reasons helps us in determining at a subsequent date whether later developments are expected or unexpected. If, for instance, a widely expected upturn in business is practically never attributed to price movements and prices change substantially in the months following the survey, we may hold that a new situation has arisen because of which the predictive value of previously expressed expectations has become doubtful. Similarly, an increase in the frequency of intentions to buy automobiles, associated with an expectation of stable auto prices, must be considered with caution if shortly after the survey auto prices are raised substantially.

Experience over the past ten years indicates, however, that major unexpected developments do not occur very frequently in the economic field. Whether they occur, we usually can find out from survey data. When they do not occur, attitudes do have predictive value. Nevertheless, data on attitude changes do not yield a definite forecast about people's future behavior. By supplementing the traditional data about people's ability to buy with data on people's willingness to

buy, the chances of making correct predictions are enhanced but are not made perfect. Unforeseen developments may occur, and people's probable reactions to them cannot be determined in advance.

Business Cycle Research

The literature on business cycles is replete with references to waves of confidence or waves of distrust. Similarly, in analytical studies of specific cyclical developments—whether it is the great crash of 1929 or the upswing of the postwar years—psychological forces which have taken hold of the people have been pointed out frequently. Most commonly, economists have not considered optimism or pessimism by businessmen or consumers as the major causal forces, but have treated them as reinforcing factors compatible with any economic theory of business cycles (3, Chap. 6). Nevertheless, changes in the attitudes of businessmen or consumers have been commonly relied upon to explain how relatively minor causes have had major effects as well as to account for the timing of turning points in cyclical fluctuations. In all these respects, economic literature is usually restricted to a priori considerations or anecdotal evidence.

Past research in economic psychology has made a contribution to business cycle studies. It has demonstrated that changes in the economic attitudes of consumers and businessmen are measurable. Through asking a variety of carefully formulated questions in surveys conducted with representative samples of the population, it has been found possible to obtain information either about the absence of changes in sentiment or about the direction of changes that have taken place (9). Sometimes this information has become available at a time when

it was not particularly useful for the purposes of policy makers in government or business. It confirmed what was generally known or what was widely expected in the light of data on national income, retail sales, production rates, and the like. At other times, however, as will be shown later, observed changes in consumer sentiment have contradicted trends derived from economic data which reflect past activities of the economy.

The present studies go beyond previous contributions in two ways. First, we now add a second measure to our arsenal of tools. In addition to relying on changes in the distribution of attitudes—the presence or absence of substantial marginal changes—we have developed the measure *T* which indicates whether the marginal change coincides with frequent offsetting shifts or results from similar influences which have affected the majority of people. The finding that there tends to be an association between large marginal changes and small *T* rates strengthens our reliance on the first measure.

Secondly, our studies on the origin of substantial changes in consumer sentiment indicate that uniform acquisition of experience is possible and may be effective. It happens that the same information is apprehended by very many people in the same way and leads to similar changes in people's attitudes and actions. Keynes argued that consumer expectations—their income expectations to be precise—are likely to average out for the country as a whole (11, p. 95). Should this be generally true, then economists would rightfully neglect the consideration of consumer expectations. For the economist is not interested in explaining the antecedents of action by individuals. Whether Mr. Smith steps up his rate of consumption because of his optimistic

views or because his income has gone up is not relevant for the economist unless there are many more people who increase than people who reduce their rate of spending. Only in that case will the economy be affected and will the factors bringing forth changes in the behavior of the masses become a concern to economists.

This author has argued before that changes in consumer sentiment usually will not cancel out but will rather resemble a contagious disease which tends to spread to very many people (4). This argument, derived from general sociopsychological principles, was not based on specific studies of the origin of economic attitudes. Now empirical research confirms the occurrence of nonoffsetting changes in economic attitudes. The current studies aim at the specification of circumstances under which it is probable that changes in the attitudes of some people in one direction will cancel the changes in the attitudes of other people in the opposite direction, as well as the circumstances under which this offsetting effect is not probable. The latter is expected to be the case when—and we summarize all too briefly—uniform acquisition of information has taken place.

This answer leads to new questions, the consideration of which will help to clarify the answer itself. First we have to ask: Why do we bother with attitudes; why not rely on the information which resulted in changes in attitudes? If attitude change is the result of economic or political developments about which information is transmitted, we may do better by considering the underlying factors about which factual information is or should be available. This notion must be contradicted. Even complete knowledge of all events and developments

would represent nothing more than a listing of possible stimuli. Even if such a listing is obtained, for instance, through content analysis of news transmitted, we would not know which items of news are salient and how they are apprehended. This can be done only by starting with the attitudes. Knowing of the prevailing attitudes and their recent changes, we may connect them with events and developments because then we are in a position to select the relevant stimuli.

To be sure, there may be exceptions. Events may occur from which we may deduce how they will influence people's attitudes and actions. Developments of overwhelming significance, especially of a catastrophic nature, may belong in this category—although consumer and business reactions to the outbreak of war have not always been correctly assessed. But, neglecting developments which we know *a priori* are salient, it is necessary to analyze further the difficulties encountered in any attempt at deducing the probable attitude changes from observed events.

As our first example we shall consider a situation in which very many families experience income gains. Will this development necessarily result in optimistic attitudes and a high rate of spending? There is evidence that even the effect of income increases on consumer feelings of being better off cannot be predicted with any degree of assurance. Often, though, increases in real income and sometimes even increases of money income did have this effect, but at other times this was not the case. The latter situation occurred, for instance, in 1957. In order to understand it we may recall that in 1954, as discussed before, consumer attitudes improved greatly. At that time, however, income increases were relatively infrequent: In October 1954, 28% of a repre-

sentative urban sample of American families reported income increases; and 27% income decreases. By 1956, the proportion with income increases rose to 32.5%; and by March 1957, to 43.5%. The proportion with income declines was as low as 15.0% both in 1956 and 1957 (the remaining families reported stable income). From 1956 to 1957, however, in spite of the favorable trend in stimuli, the feeling of being better off declined in frequency and consumer optimism also declined. That prices went up in the year prior to March 1957 appears to be only one of the explanations for this observed divergence. Many other considerations—such as the notion that income increases reflected past business improvement which may not continue—must be taken into account and may help to explain the response to income increases, provided the attitudinal data are known. At this point it suffices to say that in March 1957 no valid conclusions could be drawn about the trend of consumer attitudes from observing that income gains greatly increased in frequency and were three times as frequent as income declines.

We may cite briefly a second, somewhat different, example. Suppose that at a given time, discounts offered to buyers become widespread: content analysis of news reveals the establishment of discount houses and the availability of high trade-in values for important consumer goods (as was the case in 1953-54). Perhaps we may then predict that this news will have a favorable effect on consumer demand. But can we also say, without studying consumer opinions and attitudes, that very many people will know of the discounts? Since not all information transmitted an impact on masses of people, in this respect again attitudinal studies remain indispensable.

The most complex example known to us consists of the impact of price trends. Upward price movements are known to generate sometimes the expectation of further price increases; at other times, however, the expectation of price declines. Expected price increases may induce large-scale buying in advance and in excess of immediate needs, but under other circumstances they may be considered a calamity or may restrict discretionary purchases because they are seen to detract from well-being and make it harder to meet necessary expenses. It is not possible to rely on price indices, and it remains necessary to determine what attitudes and expectations result from price changes.

From the conclusion that measurement of attitude changes is indispensable, it does not follow that such measurement always yields significant new insights for business cycle studies. As said before, autonomous attitude changes occur only at certain times, while at other times attitude changes reflect past trends. The argument just presented implies that it is not possible to find out *a priori* which of the two possibilities prevails. Only after determining that prevailing attitudes do not indicate any significant new developments can one conclude that the attitude measurement did not contribute any new knowledge and that it is permissible to rely on extrapolation of past trends.

Prior to World War II business and government were usually viewed as the sectors of the economy in which changes of economic activity are bound to originate. If business investment or government spending generate higher national income and thereupon consumers add to their expenditures, we cannot assign autonomy to the consumer sector. Three times, however, during the last few years,

autonomously caused changes in consumption were observed. In 1949 a moderate decline in economic activity originating outside of the consumer sector failed to influence the consumers; they maintained their optimistic attitudes and, by increasing their rate of spending, pulled the economy out of the slight recession (4, Chap. 13). In 1951, at a time of rapidly increasing incomes, consumer resentment against price increases and the uncertainty or anxiety with which consumers viewed the cold war resulted in restraint in buying (8). Finally, in 1954 a plateau in economic activity was terminated because of optimistic feelings of consumers who were impressed by the small damage done by the widely advertised recession of 1953, as well as by price stability and the availability of "good buys" (9). Consumer optimism led to further upgrading of consumer possessions for the sake of which broad groups of consumers were willing to allow their instalment debt burden to grow. On the other hand, to mention just one example of rather different developments, late in 1955 consumer sentiment, as well as behavior, reflected improved business conditions and growing income and did not provide new incentives to the economy.¹⁹

From these experiences the conclusion may be drawn that the consumer sector, just as the business sector, may act autonomously as well as nonautonomously.

¹⁹ Consumer attitude surveys, conducted by the Survey Research Center toward the end of 1955 as well as the end of 1956, indicated optimistic sentiment and a fair rate of buying intentions, yet no gains in either respect as against previous measurements. From these findings the conclusion was drawn that "The consumer sector cannot be counted upon to provide any new strength or impetus to the economy." These indications were fulfilled by subsequent economic developments. According to a survey conducted in June 1957, consumer optimism was weakening at that time.

From the point of view of business cycle theory this conclusion does not suffice. The finding that consumers may influence economic activity in an autonomous manner, because new information may change the economic attitudes of masses of consumers in a uniform way, gives rise to further questions.

Two new facts confront us today compared to the situation which has prevailed at earlier times. One is the increased availability of information, and the other the increase in the number of decision makers whose action may influence economic developments. It may be argued that not so long ago news spread slowly and most people were ignorant of happenings outside their limited sphere; today, however, with rapid mass communications, every localized difficulty or incipient tendency becomes widely known. Is this situation conducive to exaggerated and excessive reactions and, therefore, to a spread and snowballing of either inflationary or deflationary tendencies? Regarding the growing influence of the consumer sector, we have to ask: Does it make a difference that several million household units may influence economic activity rather than a few thousand large business units? Both of our questions may be summarized by asking whether too much information received by too many people is detrimental to economic stability.

It has been frequently asserted that expectations may spread rapidly and may become self-reinforcing and self-justifying. One may recall the bank runs in the early thirties. It was then said that banks failed because they were expected to fail. Rumors that a bank was not sound led people to withdraw their deposits; even a strong bank could not resist the cumulative process in which

more and more people participated and made the rumors come true by their action. Or one may think of the vicious circle of the same period: a slight reduction in demand led to cutbacks in production, then to fear of unemployment and the expectation of lower incomes, which in turn made more and more people reduce their expenditures, and incomes declined because of curtailed demand. Contrariwise, inflationary fever was experienced in Germany, France, China, and many other countries. People expected prices to go up, therefore spent their money rapidly, which made prices go up; when people found their expectations fulfilled, they expected further price increases and hastened to hoard goods—that is how the cumulative process of self-realization of expectations was set in motion.

Are these typical instances of human reactions? One may wonder whether the bank runs and the great inflations have been correctly described in the preceding lines. Do we mean to assert that the processes originated in unjustified rumors about the difficulties of banks or about future price increases, and ultimately the unfounded expectations made themselves come true? Even assuming that this may occasionally have happened, is it the common or usual situation? We also have experience with recessions and inflationary movements which were arrested early. Incipient movements of prices or sales are often reversed after a short flurry. During the past ten years in the United States, small recessions and small inflationary movements were the rule rather than the exception. The theory of self-justifying expectations applies to but one type of experience, a rather rare one for that matter, and does not help to explain reversals of expectations.

Although the evidence available at present is fragmentary and not conclusive, it is possible to spell out a set of assumptions which are derived from the notion that the economic thinking of the masses is fundamentally conservative and sane. Cumulative and self-justifying expectations may then be viewed as a form of catastrophic behavior. People resist speculative fever as well as despondency unless their sanity is crushed by a series of repeated shocks. News and rumors which have no solid foundation may be accepted for a short while by some people, but will not sustain action by very many people over prolonged periods.

The basis of mass sanity may be found in the desire to understand the reasons for developments that take place. Unless news is altogether without foundation, some information about what has caused the new developments is transmitted and will be understood. Expectations may originate in two ways: either through projecting past trends or through understanding that there are good reasons for new trends (4, Chap. 4). The first instance, when past price increases generate the expectation of further price increases, is not the only one. Expectations of price increases have been observed to originate at times of stable prices because of the understanding of certain underlying factors which would give rise to a new development. When, then, the expectations are fulfilled—prices have gone up—people may note that what was called for has happened and that the forces are exhausted. Similarly, when expectations are based upon simple projections, people search for an understanding of underlying reasons and, failing to find such reasons, the expectations will not be sustained. Unfounded rumors may influence some people's behavior for

a short time, but in order that expectations of very many people be maintained over long periods, people must understand the reasons for their expectations.

Obviously, the term "understanding" used in the preceding discussion does not involve sophisticated knowledge about economic relationships. It implies a feeling about what leads to what, which is not only within the capacity of broad middle income groups, but is also the prerequisite for their discussing economic events. Such discussion, we stated before, was found to be an essential condition for social facilitation of opinions and attitudes.

Interviews reveal that the large majority of people promptly answer such questions as "Why do you say so?" or "Why do you think so?" following the expression of opinions about the prospective trend of prices or economic activity. To be sure, the reasons are not given in terms of complex theories. Frequently the answers consist of such statements as "Everybody is buying," "There is more demand than supply," "The buyers are in control," "There's lots of money around." Whether or not economic analysts are satisfied with these explanations is unimportant. The people who say so are satisfied; they feel they know why prices will go up. They see a connection between their experience and their expectation.

The understanding of economic developments by broad groups of people seems to involve some stereotyped notions which are fundamentally conservative. "What goes up must come down," is frequently said, or "Trees don't grow to heaven." There are limits to most trends in the opinion of most people. The forces that generate the trends are not thought to be inexhaustible. Often,

the longer a trend continues, the more people are inclined to watch out for reversals.

It is, therefore, possible that in the economic area mass reactions are characterized more by self-regulatory features than by a tendency toward excesses. We may illustrate this notion by describing one of the major developments of post World War II American economy. We refer to the process of "upgrading" consumer possessions and standard of living. In these years gratification of needs—be it for a new car or a larger television set—has commonly resulted in the emergence of further needs, rather than in saturation. The new needs and desires for better products arose among people who were quite well provided for and not among the "have-nots."

These observations were made at a time when the majority of people were confident that their personal financial situation would improve. People had experienced frequent raises in wages and salaries, were satisfied with their occupational progress, and became convinced that they were entitled to expect continuous improvement in their standard of living. Are these expectations and desires without limit? Do they necessarily result in over-buying and subsequent collapse? Consumer purchases are dependent both on felt needs or sentiment and on ability to buy. For many years economic forecasts about saturation with consumer durable goods proved to be wrong because younger, middle, and upper income consumers were willing to enlarge their instalment debt burden for the sake of upgrading their possessions. When in 1955 the proportion of incomes mortgaged for debt repayment rose substantially, government experts called for a regulation of instalment

credit. No regulation was enacted, however, and the experience of the following two years indicated that such a regulation was not necessary. The consumers themselves regulated their financial position. No doubt, some individual families overreached themselves. Many more figured what they considered to be the permissible debt burden on the basis of the income they expected to have in the future rather than on the basis of their current income. (Therefore they and the economy would have been in a difficult situation if the expected income increases had failed to materialize.) But as the slower rate of automobile purchases in 1956 and 1957 has shown, consumers on the whole knew that there were limits to how far they could go in adding to their monthly contractual charges. And they kept in mind that unexpected developments might occur and would have to be provided for through accumulating liquid reserves. The desire to save remained strong at the same time when great emphasis was placed on the improvement of standard of living.²⁰

Thus it is possible that many millions of relevant decision makers, obtaining prompt and similar information about economic developments, add to the stability rather than the instability of the economy. Possibly, the more decision makers there are, the less probable are excessive reactions. It may be argued that dynamic forces may more easily sway an entire group when the group is small—as, for instance, big business—and has the power to control economic activity. With the much more diffuse masses of consumers, early reactions and reversals are more probable.

²⁰ In (5) it has been shown that the importance attached to saving and the desire to save have not declined at all during the ten prosperous years following World War II.

We found that extensive groups of consumers may acquire the same new economic information at the same time and may accordingly change their attitudes and behavior. It is conceivable that occasionally this ability will lead to the vicious circle of deflation or the mass hysteria of runaway inflation. Yet, knowing what it takes to influence the attitudes of masses of consumers, we are in a better position to understand the developments of the past ten years. In this period, consumers contributed to economic stability either by serving as a brake to inflationary trends or by stepping up their demand when the economy needed new incentives so as to emerge from a plateau.

Theory of Behavior

We may reformulate our conclusions without reference to economic developments. While in the preceding discussion we stressed the implications for business cycle analysis, we now turn to behavioral theory.

The finding that acquisition of information may result in change of attitudes means, of course, that cognition may influence affective preferences. There is nothing new in this statement, even though the process has been rarely demonstrated, and the reverse process (affects influencing cognition) has been more frequently emphasized in recent psychological research. The impact of cognition, both on affect and on action, has been shown in a social situation. There is every reason to believe that the similarity of the information acquired by members of the same group, or by people with similar interests, is an essential feature of the learning process here studied and that the similarity of affective reactions is greatly promoted by social interaction. The introduction of the

term "social learning" is justified because social action represents the end result of the process here described. In studying individual behavior we do find people who acquire information about an improvement of economic conditions, thereupon change their attitudes in the optimistic direction, and nevertheless do not make any purchases of durable goods. Conversely, some individuals make such purchases without acquiring new information and without changing their attitudes. What is claimed here relates only to the average behavior of groups of people in the two situations. In other words, we are concerned with social learning which has an impact on the society (or economy).

What can be said about the process of social learning? Is it basically a process of imitation, of following the leader, of keeping up with the Joneses? We find that similar stimuli elicit similar responses. But a statement about similarity of stimuli does not suffice. The information on economic developments reaching the people has innumerable aspects, of which only some become salient and relevant. Our perceptions are selective. Why is it that at certain times the same aspects of information become influential? Here we note the effect of groups on the individual. People belonging to the same face-to-face group or having similar interests (e.g., the occupational groups) have the same kind of apperceptive mass. They are predisposed to select the same information and to understand the information they receive in a similar manner. There also exists pressure toward uniformity both in selecting the information and in understanding it. Finally, there is mutual reinforcement of information among group members. The aspects of information people tend to

discuss in their group are those with which they most strongly agree or disagree, and these conversations tend to result in uniform attitudes. No doubt many individual differences remain even among members of coherent groups. Yet it is the direction of the attitude change which matters. This direction tends to be the same when a "current" ensues which becomes hard to resist.

SUMMARY

We may summarize our model on the origin of changes in expectations in the following Points 1 and 2 and present derivations from the model, made probable by the empirical findings, in Points 3 and 4.

1. Change in expectations is due either (a) to the acquisition of widely transmitted information of a general nature, (b) to personal experiences, or (c) to errors of measurement.
2. At any given time, there will be individuals with whom Variables *b* and *c* operate in one direction, and individuals with whom they operate in the opposite direction. On the other hand, most commonly, Variable *a* is either noninfluential or operates in the same direction with very many people.
3. If Variable *a* is not influential, ag-

gregate changes in expectations will be small because most changes in individual expectations cancel out. Observing substantially unchanged distributions, it is not permissible to assume that most individuals have maintained their previous expectations; on the contrary, it is probable that among individuals there have been frequent changes in both directions. (This statement does not hold good for relatively deep-seated and enduring attitudes, when very small changes in aggregate distributions were observed together with infrequent cross shifts by individuals.)

4. If Variable *a* is effective and substantial, then aggregate changes in expectations will likewise be substantial. This means that under these circumstances contrary effects of variables of Type *b* are suppressed or lessened. Substantial aggregate changes in expectations should then be attributed to variables of the Type *a*. This final derivation from the model, implying causal relations, is suggested (rather than demonstrated) by data on information acquired by different groups as well as by an association between high marginal change rates and low rates of unnecessary turnover.

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APPENDIX

The technique used for the purpose of measuring the level of economic information of the panel consisted of handing a printed card to each respondent with the following instruction: This card contains some answers we received when we asked people about what had happened during the last twelve months in the American economy. Please check those items which you agree have happened.

There were three columns on the card, one of which had to be checked for each statement. The columns were labeled "Happened," "Did Not Happen," and "Don't Know." Some of the statements were true, others were false. The answers were scored for correctness; people who checked "Don't Know" were taken as not having correct information.

The seven statements given to the respondents in June 1955 read as follows: What happened during last 12 months?

1. Business conditions improved.
2. The cost of living was stable.
3. Unemployment increased.
4. People have less money to spend than a year ago.
5. Stock prices went up.
6. Defense spending by the Government declined.
7. The Federal budget was balanced last year.

Altogether, 27% of the sample answered 0, 1, or 2 items correctly ("Hardly any correct information"); 53%, 3, 4, or 5 items ("Some correct information"); and 20%, 6 or 7 items ("Much correct information"). The mean number of correctly answered items was 3.73. Since the economy improved greatly in the year prior to June 1955, correct information refers to favorable developments.

The percentage of correct information received was highest regarding the cost of living (Item 2) and was relatively high also regarding four other items. Least was known about stock prices (Item 5) where the majority checked "Don't Know,"

and about defense spending (Item 6) where the frequency of "Happened" and "Did Not Happen" answers was quite similar.

Questions on economic information, identical in form but different in content from the previous ones, were also asked in March 1957. The seven statements, about which respondents were asked to say whether they had or had not happened during the past twelve months, were the following:

1. Industrial production declined.
2. The cost of living rose somewhat.
3. Unemployment increased.
4. Stock prices went up sharply.
5. On the average incomes increased.
6. Interest rates rose.
7. Fewer cars were sold in 1956 than in 1955.

The correct answers were that Items 1, 3, and 4 had not happened and that Items 2, 5, 6, and 7 had happened. As can be readily seen, some correct answers represent favorable developments and some correct answers unfavorable developments in the economy.

Altogether, 22% of the sample answered 0, 1, or 2 items correctly (hardly any correct information); 46%, 3 or 4 items; and 32%, 5, 6, or 7 items (Much correct information). The mean number of correctly answered items was 3.74.

Detailed analysis shows that the great majority of people answered correctly the questions about the cost of living, about incomes, and about interest rates (Items 2, 5, and 6). Regarding each of the other four items, fewer than half of the respondents gave correct answers. (The others either said that they didn't know or gave incorrect answers.) As mentioned above, the frequency of incorrect information regarding two items was particularly notable. The majority of lower and middle income people thought (incorrectly) that unemployment had increased; in all income groups less than half of the people knew that fewer cars were sold in 1956 than in 1955.



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